

Serial No. 10/678,579
Reply to Office Action of June 27, 2006

Amendments to the Claims:

Please amend claims 18 and 20 as follows.

Please add new claims 30-31.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-17. (Cancelled).

18. (Currently Amended) A method for providing traction for a multi-wheeled heavy-duty materials handling apparatus, comprising the steps of:

running an engine;

driving a generator from the engine, producing a DC voltage;

switching the DC voltage, driving a first switched reluctance (SR) motor,

comprising the steps of:

calculating a position of a rotor of the SR motor independent of sensors;

and

turning on and off current through coils of the SR motor responsive to the

calculating step;

driving a first wheel of the heavy-duty materials handling apparatus by the SR motor;

controlling the operation of the first SR motor by a digital control system; and

controlling the operation of the heavy-duty materials handling apparatus and a materials handling system of the heavy-duty materials handling apparatus by the digital control system,

wherein the step of driving a generator from the engine, producing a DC voltage and the step of driving a first wheel of the heavy-duty materials handling apparatus by the SR motor are performed concurrently.

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19. (Original) The method of claim 18, the step of driving a generator comprising the steps of:

driving an AC generator from the engine; and
converting an output of the AC generator to the DC voltage.

20. (Currently Amended) The method of claim 18, the step of running an engine comprising the step of:

running the engine at a substantially constant predetermined RPM.

21. (Original) The method of claim 18, further comprising the step of:

dissipating excess power when slowing the SR motor from a predetermined speed.

22. (Original) The method of claim 18, wherein the SR motor is a multi-phase motor having a plurality of poles, further comprising the steps of:

energizing less than all of the poles of the SR motor;
holding the motor in a predetermined rotational position.

23. (Original) The method of claim 18, further comprising the step of:

reversing the first wheel, comprising the step of:
reversing the SR motor.

24. (Original) The method of claim 18, the step of switching the DC voltage further comprises the step of:

driving a second SR motor;
further comprising the steps of:
driving a second wheel of the heavy-duty materials handling apparatus by the SR motor;
controlling the operation of the second SR motor by the digital control system.

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25. (Original) The method of claim 18, further comprising the steps of:
driving a second wheel of the heavy-duty materials handling apparatus by the first SR motor.

26.-29. (Cancelled).

30. (New) A method for providing traction for a multi-wheeled heavy-duty materials handling apparatus, comprising the steps of:

running an engine at a substantially constant predetermined RPM;

driving a generator from the engine, producing a DC voltage;

switching the DC voltage, driving a first switched reluctance (SR) motor, comprising the steps of:

calculating a position of a rotor of the SR motor independent of sensors;

and

turning on and off current through coils of the SR motor responsive to the calculating step;

driving a first wheel of the heavy-duty materials handling apparatus by the SR motor;

controlling the operation of the first SR motor by a digital control system;

controlling the operation of the heavy-duty materials handling apparatus and a materials handling system of the heavy-duty materials handling apparatus by the digital control system; and

dissipating excess power when slowing the SR motor from a predetermined speed,

wherein the step of driving a generator from the engine, producing a DC voltage and the step of driving a first wheel of the heavy-duty materials handling apparatus by the SR motor are performed concurrently.

31. (New) A method for providing traction for a multi-wheeled heavy-duty materials handling apparatus, comprising the steps of:

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running an engine;
driving a generator from the engine, producing a DC voltage;
concurrently with driving the generator, switching the DC voltage, driving a first multi-phase switched reluctance (SR) motor having a plurality of poles;
driving a first wheel of the heavy-duty materials handling apparatus by the SR motor;
controlling the operation of the first SR motor by a digital control system;
controlling the operation of the heavy-duty materials handling apparatus and a materials handling system of the heavy-duty materials handling apparatus by the digital control system;
stationary braking the heavy-duty materials handling apparatus, comprising the steps of:
energizing less than all of the poles of the SR motor; and
holding the SR motor in a predetermined rotational position.